

AMENDMENTS TO THE CLAIMS

This listing of the claims replaces all prior versions, and listings of claims in the application:

Claims 1-46. (Cancelled).

--47. (New) A valve assembly comprising:

a first hollow member having an open first end, an open second end, a blower discharge opening defined by at least a portion of a wall thereof, an exhaust intake opening defined by at least a portion of the wall thereof between the blower discharge opening and the second end, and a separating member disposed in the first hollow member between the blower discharge opening and the exhaust intake opening;

a second hollow member having a first opening defined by at least a portion of a wall thereof, with the second hollow member positioned coaxially around the first hollow member; and

an actuator associated with the first hollow member and the second hollow member for moving the second hollow member with respect to the first hollow member.

48. (New) A valve assembly according to claim 47, wherein the actuator comprises:

a magnet secured to one of the first hollow member and the second hollow member; and

a coil secured around the other of the first hollow member and the second hollow member in magnetic flux coupled relation with the magnet and configured to receive DC current.

49. (New) A valve assembly according to claim 47, wherein:

the first hollow member includes a center barrel, a first barrel, and a second barrel, with the first barrel and the second barrel positioned coaxially at opposite ends of the center barrel;

the magnet is mated with the center barrel;

the second hollow member has the coil received therearound;

the second hollow member is received in sliding engagement around the magnet and the center barrel with the first opening of the second hollow member positioned at the end of the first hollow member adjacent the second barrel; and

the second barrel includes the blower discharge opening, the exhaust discharge opening, and the separating member, with the second barrel having one end received in the end of the second hollow member opposite the first barrel and secured to the end of the center barrel.

50. (New) A valve assembly according to claim 47, wherein the magnet and coil are configured and arranged such that in response to receiving DC current of a first polarity, the coil urges the second hollow member axially relative to the first hollow member so that the first opening of the second hollow member and the blower discharge opening of the first hollow member overlap, and so that in response to receiving DC current of a second polarity, opposite the first polarity, the coil urges the second hollow member axially relative to the first hollow member so that the first opening of the second hollow member and the exhaust intake opening of the first hollow member overlap.

51. (New) A valve assembly according to claim 47, wherein the first hollow member has stops at opposite ends thereof that coact with ends of the second hollow member to restrict axial movement of the second hollow member between the ends of the first hollow member.

52. (New) A valve assembly according to claim 51, wherein at least one stop at an end of the first hollow member is comprised of a shoulder formed therearound.

53. (New) A valve assembly according to claim 47, wherein at least a portion of at least one of the blower discharge opening and the exhaust intake opening is defined in the first hollow member in one of a diagonal, circular, arched and a spiral configuration.

54. (New) A valve assembly according to claim 47, wherein at least one of the blower discharge opening, the exhaust discharge opening, and the first opening is shaped to so as to have a varying mechanical gain.

55. (New) A valve assembly according to claim 47, wherein during operation, the blower discharge opening overlaps the first opening provided in the second hollow member to define an aperture in the valve assembly, wherein movement of the second hollow member relative to the first hollow member changes the size of the aperture.

56. (New) A valve assembly according to claim 47, wherein during operation of the pressure support system, the exhaust discharge opening overlaps the first opening provided in the second hollow member to define an exhaust aperture in the valve assembly, wherein movement of the second hollow member relative to the first hollow member changes the size of the exhaust aperture.

57. (New) A valve assembly according to claim 47, wherein during operation of the pressure support system, both the blower discharge opening and the exhaust discharge opening overlap the first opening provided in the second hollow member, wherein overlap of the blower discharge opening and the first opening define a first aperture in the valve assembly and overlap of the exhaust discharge opening and the first opening define a second aperture in the

valve assembly, wherein movement of the second hollow member relative to the first hollow member simultaneously changes the size of the first aperture and the second aperture.

58. (New) A valve assembly according to claim 47, wherein a clearance is provided between the first hollow member and the second hollow member sufficient to provide a continuous flow of gas therethrough.

59. (New) A pressure support system comprising:
a pressure generator having an inlet portion and an outlet portion for generating a flow of gas;

a first conduit having a first end open to ambient atmosphere and a second end coupled to the inlet portion of the pressure generator to supply gas from a gas source to the pressure generator;

a second conduit having a first end coupled to the outlet portion of the pressure generator and a second end to deliver the flow of gas from the pressure generator to a patient; and

a valve assembly operatively connected to the second conduit to control one of a pressure and a rate of the flow of gas in the second conduit, wherein the valve assembly comprises:

a first hollow member having an open first end, an open second end, a blower discharge opening defined by at least a portion of a wall thereof, an exhaust intake opening defined by at least a portion of the wall thereof between the blower discharge opening and the second end, and a separating member disposed in the first hollow member between the blower discharge opening and the exhaust intake opening,

a second hollow member having a first opening defined by at least a portion of a wall thereof, with the second hollow member positioned coaxially around the first hollow member, and

an actuator associated with the first hollow member and the second hollow member for moving the second hollow member with respect to the first hollow member.

60. (New) A pressure support system according to claim 59, further comprising a port defined in the second conduit for directing a portion of the flow of gas from the second conduit for cooling purposes.

61. (New) A pressure support system according to claim 59, further including:
a pressure sensor that measures fluid pressure in the second conduit and produces a pressure signal indicative thereof;

a flow sensor that measures fluid flow in the second conduit and produces a flow signal indicative thereof; and

a controller operatively coupled to the pressure sensor and the fluid sensor and to the valve assembly, wherein the controller actuates the valve assembly to control one of a pressure and a rate of the flow of gas in the second conduit.

62. (New) A pressure support system according to claim 59, wherein a clearance is provided between the first hollow member and the second hollow member sufficient to provide a continuous flow of gas therethrough from the pressure generator.

63. (New) A pressure support system according to claim 59, wherein at least one of the blower discharge opening, the exhaust discharge opening, and the first opening is shaped to so as to have a varying mechanical gain.--